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ABSTRACT

This study identified student reasons for participating in synchronous Web-based learning environments. Students were interviewed after completing a series of surveys designed to elicit their perceptions of the strengths and weaknesses of the delivery methodology. Responses indicated that both convenience and learning enhancement were considered advantages, while disadvantages included isolation and technology quality. (Author)

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Student Perceptions of Online Synchronous Courses

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This study identified student reasons for participating in synchronous web based learning environments. Students were interviewed after completing a series of surveys designed to elicit their perceptions of the strengths and weaknesses of the delivery methodology. Responses indicated that both convenience and learning enhancement were considered advantages, while disadvantages included isolation and technology quality.

Background

Our daily routines of having to juggle work, travel, family and for some, the desire to further their education, is being challenged by the increasingly mobile nature of our society (Sherritt & Basou, 1997). In order to accommodate the changing lifestyles of the student population, institutions of higher education are offering courses in many and varied formats beyond the traditional in-class setting. Students every semester are having to make a choice of not only what courses to take to fulfill their degree requirements, but once selected they are having to decide in which campus to attend and/or in which class format. Beyond the usual on-campus class offerings, courses are also being broadcasted either via Vtel/Tangem systems (Distributed Learning) or via the Internet, also known as Web based courses.

Online Class Formats

Web based courses maybe offered either asynchronously or synchronously. For some students, Web based courses are the best solution because of their space independent and sometimes time independent nature as in the case of the asynchronous class format. In the asynchronous setting, professors post all class resources such as handouts (syllabus, schedule and assignments), power point presentations, and even video lectures on a web site. Students can then, using the course schedule and/or other instructional design scheme provided by the instructor, study the materials and complete the requirements to successfully master the objectives.

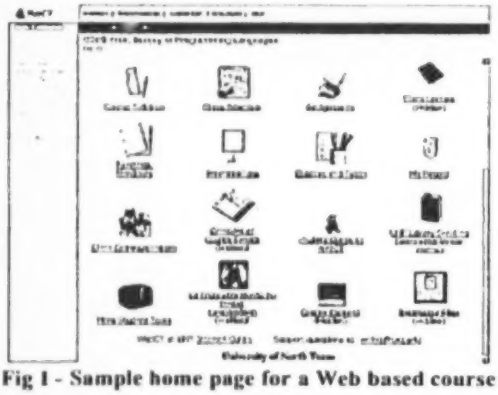

Fig 1 - Sample home page for a Web based course

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The asynchronous format allows students to "attend" the class at any time from anywhere, thus accommodating not only the students' schedule but also many, sometimes insurmountable, obstacles such as distance from school, lifestyle commitments, and more.

Courses offered in the synchronous format posses all the same characteristics as their asynchronous counterparts except that students must "attend" the live lectures at the pre-arranged class times. Still, this setting offers the space independent feature that allows students to watch the class videos from wherever they choose (home, office, library, other), wherever a computer with an Internet browser and Real Player client software is available.

Fig 2 - Synchronous class format

In this setting students can follow the broadcasted lectures videos with the help of the teacher's power point, and use the chat room to ask questions in real time. So essentially, the difference between the synchronous and asynchronous settings is that students in the asynchronous setting are not able to ask questions in real time. Otherwise, the feel and accessibility to the resources is the same for both settings.

Methodology

A recent study was conducted with a group of graduate students attending an online web-based course taught at the university level. For purposes of this paper only the factors uncovered in the synchronous class-setting portion of the course will be discussed. Students, in this study, were observed, interviewed and asked to complete surveys to determine their perceptions, experience and overall "feelings" for the class format. Questions asked were intended to help find answers to the main research question of "What were the advantages and the disadvantages of the synchronous class format of the course?" A qualitative approach of data gathering and analysis was used to collect students' verbal and textual answers. The three qualitative methods of data gathering used in this study – interviews, observations and surveys – insured the validity of the findings through triangulation (Glaser & Strauss, 1967). As a result, factors were uncovered and grouped as either an advantage or a disadvantage. Further, using the grounded theory approach to data analysis introduced by Strauss and Corbin (1990) relationships between factors under these general groups were established and so related factors were clustered under these emergent categories.

Data Interpretation

Following the grounded theory approach, student statements were carefully read and compared multiple times with other student statements to find commonalities. These commonalities were then identified as the underlying themes, which in turn became the categories. Next, all statements were clustered under the category of "best-fit" following a similar process of analysis. Some students' comments were stored under more than one category because of their broadness. Finally, categories were grouped as advantages and disadvantages. Fig 3 & 4 show the advantages and

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disadvantages of the synchronous class setting. Although tallies were kept for the number of student responses grouped under each factor, this quantification was not used to determine the true statistical relevance of each factor but to affirm its importance and give future investigators ample evidence by which to judge the appropriateness of the categories. These categories will be considered the variables of future studies.

On examination of the tallies, ***Convenience*** and ***Learning Enhancement*** were the most frequently cited advantages for the synchronous class format (57% of all positive statements). Under ***Convenience***, Economy of Travel, Comfort of Familiar Environment and Similarity of Traditional Environment ranked the highest with a 24% of the total number of statements made. Travel was the one sub-category most often mentioned by students, 53% of the students made a positive statement about the advantages of not having to travel to school. As (Cristina) stated, "I feel I'm making the most of my time. I'm not wasting my time driving when I don't have to." All other subcategories of ***Convenience*** were closely related to these three. Under ***Learning Enhancement***, Technology Factors and Comprehension/Understanding ranked the highest with 19% of all the statements made. Of the two factors, Technology Factors ranked the highest. In this sub-category, students expressed a liking and/or an increased understanding of the technology used, which became a benefit they did not set out to gain. (Leslie) best explained it, "That maybe one reason why I prefer to do something on the Web, rather than just go to class. Because, the challenge in and of itself, just to get on line, and make sure that everything works. That to me, it's really cool!"

The disadvantages of this synchronous online setting ranked highest were related to ***Technology*** and to ***Isolation***. Under Technology (45% of all negative statements), complaints ranged from apprehensions with using the technology, to the video's poor quality, to complaints with the transmission delay over the Internet. As for Isolation (35% of all negative statements), complaints were mostly related to lack of opportunities for informal socialization with the teacher and students. In general, with faster connections and proper technology training, students can be helped to overcome some of the apprehensions online courses present.

Conclusions

In this study, there were 91 negative statements made vs. 230 positive statements made about the synchronous online setting experienced. The figures and the comments appear to support the assumption that online synchronous courses present more advantages than disadvantages. Students found that this classroom setting supports their lifestyle while allowing them to "attend" classes. Students with a hectic life, full of commitments and who live at a distance from school seem to fully embrace Web based courses as an alternative to wasting hours in driving to and from school, and to be able to stay closer in touch with their family and in a more comfortable environment. Online synchronous courses offer students an alternative to coming to campus, and an opportunity to further their studies in an otherwise unlikely situation. Although no one class format has yet been proven ideal for everyone, from some student's perspective Web based courses are making education an accessible reality.

References

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Table 1 – SYNCHRONOUS CLASS FORMAT – *ADVANTAGE FACTORS*

CATEGORY/Subcategory	DEFINITION/responses related to:
CONVENIENCE	Advantages which "save work" in the students' course experience.
Family	the student's increased time to be with other members of his or her family.
Focus	improved concentration and focus on the class material.
Comfort of Familiar Environment	the convenience of viewing the lectures in one's own comfortable surroundings.
Economy	responses related to a savings of resources, including:
Money/Time	
Travel	no driving to and from school-work-home
Eco-System	contributing to saving the environment.
Similarity to Traditional Classroom	responses related to feeling as comfortable with the setting as when being in the classroom or feeling that one is not missing out on any of the interaction or visual cues.
FLEXIBILITY	advantages which allowed students to adjust the course experience to changes in their lifestyles and personal preferences.
Class Backup	having the lectures available in case class had to be missed.
Learning Self-Assessment	assertions made by students that, with this class format, they had acquired the same amount of knowledge that they would have attained in a traditional classroom setting.
Schedule Flexibility	establishing a lecture-viewing schedule around one's work and family schedule.
Viewing Flexibility	the ability to stop or pause viewing the lectures, for any amount of time, due to any type of interruption.
HUMAN INTERACTION	advantages related to the exchange of information among class participants that benefits all involved.
Community Maker	responses related to interacting with others in the classroom for reasons other than course content related, resulting in a sense of camaraderie, a feeling that one knows the classmates.
Communication	responses related to the exchange of information among class participants.
Interaction	being able to have immediate connectivity/interaction with teacher and students.
Socializing	interacting with professor or students for reasons other than course related material.
Immediate Questioning	Ability to ask the professor u other students questions about the class material as soon as need arises.
Body Language Cues	body gestures generated by the speaker that supports oral communication.
Class Discussions	being able to hear or see, oral, or textual communication of other class participants.

LEARNING ENHANCEMENT	all those advantages that represent new approaches to a classroom routine and that turned out to be beneficial to the student.
Better Note Taking	for which the video-pause feature was key.
Comprehension/Understanding	the ability to go over the class material more than once for improved understanding depending on need.
Reviewing Lectures	repeatedly viewing the lectures in full increments.
Content Accuracy	repeatedly viewing the lectures in short increments.
Discipline	increased personal **Discipline** – setting and following a viewing schedule.
Multi-Tasking	concurrently performing two or more activities while effectively dividing one's attention.
Technology Factors	while using the technology required to "attend" classes in this format, the student learned to use the new technologies, and, in the process, developed a liking for them.

PSYCHOLOGY	advantages that have, from the student's perspective, beneficially affected the personality or psyche of the participant.
Posing Questions	a) at the student's chosen time but not necessarily during class time, b) once the student had collected his/her thoughts, c) in a more private setting without a face-to-face encounter with the teacher and other students.
Teacher Support	obtaining **Teacher Support** due to a more frequent and structured connection between students and teacher in this setting than when attending classes in a traditional format.
Participation	decreased **Participation** or the choice of not listening to other student's questions, anecdotes, comments and other off-the-track distractions, by fast-forwarding or skipping over portions of the recorded lecture
Self-esteem	An increase in **Self-esteem** or improved self-confidence and self-image by attending class through this format, in a non-threatening environment. (For a student, previous traumatic classroom methodologies had made learning a detrimental experience).

Table 2 - SYNCHRONOUS CLASS FORMAT - *DISADVANTAGE FACTORS*

CATEGORY/Subcategory	DEFINITION/responses related to:
ISOLATION	a feeling of being alone and disconnected from the teacher and other students due to a perceived lack of interaction and/or communication.
Absence of Body Language Cues	from the speaker, which eliminated the ability to discern emphasis and other meaning attached to the oral communication.
Absence of Hearing Classroom Discussions	The absence of on-going class discussions and questions on the pre-recorded lectures contributed to students feeling left out and isolated.
Absence of Immediate Questioning	immediate clarification of points made by the teacher was not possible because the lectures were pre-recorded. Although email and phone calls were to be used as the alternate tools for submitting questions to the teacher, not all students felt these were adequate.
Lack of Interaction (no feedback, no socializing)	to communication between student and teacher, and between students, beyond class discussions and immediate questioning. Some students in the course perceived there were a) a lack of socializing opportunities – getting to know other students and the teacher on a personal level – and b) a lack of feedback on the student's progress in the course.
LEARNING ENVIRONMENT	involves all those situations where the student's progress in the course was negatively affected by the environment chosen by the student in which to view the videos.
Interruptions/Distractions	problems in the student's personal environment directly interfering with the smooth, continuous viewing of the lecture.
Lack of Focus	to inability to concentrate on the content of the videos being viewed.
Missed Material	technical problems or student perceptions that contributed to gaps in viewing the lecture.
Lack of Time Flexibility	responses related to having to adjust to the online class schedule in order to view the live broadcast.
Physical Problems	responses related to health related problems that seem to worsen with prolonged use of the computer.
TECHNOLOGY	factor included technology problems that were either perceived as a potential disadvantage or actually experienced as a disadvantage by the students.
Language	loss of **Language** understanding – difficulty understanding lectures over the Internet.
Net Congestion/Buffering	difficulty accessing the videos directly from the department's server over the Internet.
Poor Video Quality	difficulty with the small size, low resolution and jerkiness of the video image.
Other Hardware/Software Problems	difficulty getting comfortable with the tech ology and the need to make upgrades to permit viewing the lectures.
Typing	responses related to students having little keyboarding skills and experiencing difficulty typing questions in the chat room expediently enough to keep up with the lecture.
Delay	a 20 second delay between actual lecture broadcast and the time the computer would output the image and sound, becoming a nuance when students would ask a question and the teacher had already passed the topic.

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